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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,022	12/06/2001	Steven Gianoulakis	AMAT/5970.05/CPES/CORE EN	8411

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APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/006,022

Applicant(s)

GIANOULAKIS ET AL.

Examiner

Ram N Kackar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 22 August 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Double Patenting

Applicant's issuance of terminal disclaimer regarding provisional obviousness-type double patenting rejection of claims 1-19 is acknowledged.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1- 2, 4-5, 7-12, 14-15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gary S Selwyn (US 5849135) in view of Byeong-Soo Kim (US 5927308) and further in view of Kimura et al (US 5908657).

Selwyn discloses annular substrate receiving member (Fig 1-12), a broadband actuator (34), an elongated stem portion to support the substrate holder (28) and mechanical means to hold the substrate (Abstract). Selwyn discloses means to separate particles from wafer surface by vibration and to remove them by using plasma.

Selwyn does not disclose vacuum chucking and air knife to blow away the particles.

Kim discloses a broadband actuator assembly (Fig 1-20 and 25), a cylindrical type reinforcement member (20 and 23) with vacuum cavity (21) and vacuum channels (23). Kim also discloses a simpler mechanism to blow away particles using an air knife assembly mounted at

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the perimeter (16). In systems where plasma may not be available this would provide an easier and alternative way to remove particles.

Kim does not disclose a conical or hemispherical reinforcement member.

Kimura et al discloses a hemispherical shaped reinforcement member enclosing a vacuum cavity, having a first open end having a radius being larger than the other substantially closed end having a smaller radius (Fig 1 202).

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to modify Selwyn by adding vacuum chucking and air knife so as to have reliable chucking for rotating the substrate and have a simpler means of particle removal without plasma.

3. Claims 3 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gary S Selwyn (US 5849135) in view of Byeong-Soo Kim (US 5927308) and further in view of Kimura et al (US 5908657) as applied to claims 2 and 11 and further in view of Jysky et al (US 3945613).

Kim and Selwyn disclose broadband actuator but do not disclose a longitudinal bore and a piston assembly with fluid inlet.

Jysky et al disclose a device to generate vibration having longitudinal bore, and using a piston and fluid inlet (Abstract and Fig 2 and 3).

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to modify the actuator of Selwyn with a vibration device of Jysky et al, which is simpler and cheaper.

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4. Claims 6 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Gary S Selwyn (US 5849135) in view of Byeong-Soo Kim (US 5927308) and further in view of Kimura et al (US 5908657) as applied to claims 4 and 12 and further in view of Dyer et al (US 5800623).

Kim or Gary S Selwyn do not disclose reinforcement ribs under the substrate support.

Dyer et al disclose a substrate support surface with ribs underneath (Fig 3 31, 32, 34 etc).

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to modify the substrate support of Gary S Selwyn to have ribs to strengthen the support so as to avoid any damage due to deflection.

Response to Amendment

5. Applicant's arguments filed 8/22/2003 have been fully considered but they are not persuasive.

Applicant has argued that in Kimura et al the bowl to hold the substrate support is not a reinforcement member and is not hemispherical.

Through specification and drawing, the applicant indicates the reinforcement member to be a bowl like structure to hold a surface for holding substrates for processing. The word reinforcement also alludes to this bowl like structure being sturdy. Examiners position in this regards is that the holding structure in Kimura et al would be sturdy because force of suction has to be withheld by it and though not exactly a hemisphere, it has a hemispherical shape. Doing minor variations from Kimura et al for proper performance would be obvious for one of ordinary skill in the art at the time invention was made. Moreover, the structure in Fig 6 of the applicant's drawing is not exactly hemispherical.

Therefore rejection stays and is now made final.

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Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 703 305 3996. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703 308 1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

RK


GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700